

Notice of Allowability

Application No.

10/657,870

Examiner

Bot LeDynh

Applicant(s)

RITTER ET AL.

Art Unit

2862

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to Applicant's amendment dated 9/7/06.
2. ☒ The allowed claim(s) is/are 1,3,6-8,10,12-16,20,24-25, 91-100.
3. ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 - a) ☐ All b) ☐ Some* c) ☐ None of the:
 1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

* Certified copies not received: _____.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.
THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.

4. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
5. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
 - (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached
 - 1) ☐ hereto or 2) ☐ to Paper No./Mail Date _____.
 - (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date _____.

Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
6. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Attachment(s)

1. ☐ Notice of References Cited (PTO-892)
2. ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3. ☐ Information Disclosure Statements (PTO/SB/08),
Paper No./Mail Date _____
4. ☐ Examiner's Comment Regarding Requirement for Deposit
of Biological Material
5. ☐ Notice of Informal Patent Application
6. ☐ Interview Summary (PTO-413),
Paper No./Mail Date _____
7. ☒ Examiner's Amendment/Comment
8. ☐ Examiner's Statement of Reasons for Allowance
9. ☐ Other _____.

EXAMINER'S AMENDMENT

An examiner's amendment to the record appears below. Should the changes and/or additions be unacceptable to applicant, an amendment may be filed as provided by 37 CFR 1.312. To ensure consideration of such an amendment, it **MUST** be submitted no later than the payment of the issue fee.

The application has been amended as follows:

-In claim 13 the phrase "he apparatus of claim 9" has been replaced with – The apparatus of claim 7 --.

-Claims 34-90 have been canceled (see Applicant's amendment dated 5/23/05).

-Claim numbers 97, 98, 99, 100, and 101 have been renumbered as 96, 97, 98, 99, and 100, respectively (note: In the Applicant's amendment dated 9/7/06, there is no claim 96).

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Dr. Bot LeDinh whose telephone number is 5712722231. The Examiner normally does not work on Fridays. The examiner can normally be reached on Maxiflex.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Edward Lefkowitz can be reached on 5712722180. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

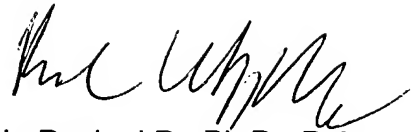
Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

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A handwritten signature in black ink, appearing to read 'Bot LeDinh', is written over the printed name.

Bot LeDinh, J.D., Ph.D., D.A.
Primary Examiner

1 93. (previously presented) The apparatus of claim 91 further comprising an
2 orientation sensor that makes measurements of an orientation of the BHA during
3 continued rotation thereof.

4
1 94. (new) An apparatus for use in a borehole for electrical imaging during rotary
2 drilling comprising:

3 (a) a resistivity sensor having an offset from a wall of the borehole that is
4 greater than a specified minimum value

5 (b) an orientation sensor making a measurement of a toolface angle of said
6 apparatus during continued rotation thereof; and

7 (c) a steerable rib which maintains said resistivity sensor at said offset.
8

1 95. (new) The apparatus of claim 94 wherein said resistivity sensor comprises
2 galvanic sensor.
3

1 ⁹⁶
~~97~~ (new) The apparatus of claim 95 further comprising a controller which maintains
2 a substantially constant power consumption by electrodes of said galvanic sensor.
3

1 ⁹⁷
~~98~~ (new) The apparatus of claim 94 further comprising an orientation sensor selected
2 from the group consisting of (i) a magnetometer, and (ii) an accelerometer.
3

1 ⁹⁸
~~99~~ (new) The apparatus of claim 94 wherein said borehole is filled with a

2 substantially nonconducting fluid and wherein said resistivity sensor is
3 capacitively coupled to said earth formation.

4

1 ⁹⁹
~~100.~~ (new) The apparatus of claim 94 wherein said resistivity sensor is selected from
2 the group consisting of (i) a shielded dipole, and (ii) a quadrupole.

3

1 ¹⁰⁰
~~101.~~ (new) An apparatus for use in a borehole for electrical imaging during rotary
2 drilling comprising:

- 3 (a) a resistivity sensor having an offset from a wall of the borehole that is
4 greater than a specified minimum value, the resistivity sensor including a
5 shielded dipole;
6 (b) an orientation sensor making a measurement of a toolface angle of said
7 apparatus during continued rotation thereof; and
8 (c) a device which maintains said resistivity sensor at said offset.